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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,695	03/05/2002	Martin J Thinnes	6147-03WOUS	9207

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EXAMINER

NGUYEN, HOAI AN D

ART UNIT PAPER NUMBER

2858

DATE MAILED: 07/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/070,695	Applicant(s) THINNES, MARTIN J	
	Examiner Hoai-An D. Nguyen	Art Unit 2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-14, 18 and 20-22 is/are rejected.
- 7) ☒ Claim(s) 15-17, 19 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03/05/2002</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The PCT International Search Report for PCT Application No. PCT/EP 00/08756 has been provided but has not been considered. However, please note that a search report is not a proper reference for an IDS.

Specification

2. The disclosure is objected to because of the following informalities: on page 3, lines 14-15 it refers to claims 1 or 2 which have been canceled "1 or 2" should be replaced with -- 9 or 10 --. Appropriate correction is required.

Claim Objections

3. Claim 10 is objected to because of the following informalities: "j" in line 4 should be replaced with -- k --. Appropriate correction is required.
4. Claim 13 is objected to because of the following informalities: "j" in line 1 should be replaced with -- k --. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 9-14, 18, 20, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moates (US 4,374,384 A) in view of Ferrari et al. (US 6,392,636 B1).

Moates teaches a matrix encoder for resistive sensor arrays comprising:

With regard to claims 9 and 10, a sensor device (FIG. 1, measuring apparatus) comprising i sensor elements (FIG. 1, resistive sensors 51, 52, ..., 79, 80) of a first type, the i sensor elements of the first type being connected in a circuitry ($n \times m$) matrix array (FIG. 1, resistive sensor array 12) with n row conductors and m column conductors, where i , n and m are natural numbers other than zero and where $1 \leq i \leq n * m$, wherein each of the i sensor elements of the first type is connected between one of said n row conductors and one of said m column conductors (FIG. 1 and from column 6, line 63 to column 7, line 68).

Moates teaches all that is claimed as discussed right above, but he does not explicitly teach the followings:

- j additional sensor elements of a second type, where j is natural numbers other than zero, and wherein each of the j additional sensor elements of the second type is connected between two of the n row conductors.
- k additional sensor elements of a second type, where k is natural numbers other than zero, and wherein each of the k additional sensor elements of the second type is connected between two of the m column conductors.

However, Ferrari et al. teach a touchpad providing screen cursor/pointer movement control comprising:

With regard to claim 9, j sensor elements (FIG. 1, resistors 311) of a second type, where j is natural numbers other than zero, and wherein each of the j sensor elements of the second type is connected between two of the n row conductors (FIG. 1 and column 10, lines 7-15).

With regard to claims 10 and 11, k sensor elements (FIG. 1, resistors 311) of a second type, where k is natural numbers other than zero, and wherein each of the k sensor elements of the second type is connected between two of the m column conductors (FIG. 1 and column 10, lines 7-15).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the matrix encoder for resistive sensor arrays of Moates to incorporate the teaching of adding a positive numbers of additional sensor elements in any manners such as each of the additional sensor elements connected between either two n row conductors, two m column conductors or the combination of the two taught by Ferrari et al. since such an arrangement is beneficial to provide more sensing elements to make more measurements in order to get a better resolution or a more accurate result.

With regard to claims 12 and 20, it will be easy for the skilled person in the art to verify that the j additional sensor elements should follow constraint $1 \leq j \leq (1/2)*n*(n-1)$ as admitted by applicants as disclosed in line 2 on page 9 of the specification of the current application being examined.

With regard to claims 13 and 21, it will be easy for the skilled person in the art to verify that the k additional sensor elements should follow this constraint $1 \leq k \leq (1/2)*m*(m-1)$ as admitted by applicants as disclosed in line 14 on page 9 of the specification of the current application being examined.

With regard to claims 14, 18 and 22, the sensor elements of the first type and the sensor elements of the second type are designed in such a way that they perform an identical function in the sensor device (the sensor elements (FIG. 1, resistive sensors 51, 52, ..., 79, 80) in Moates' reference and the sensor elements (FIG. 1, resistors 311) in Ferrari et al.'s reference are all resistors, therefore it must perform an identical function the sensor device).

Allowable Subject Matter

7. Claims 15-17, 19 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

- The primary reason for the indication of the allowability of claims 15, 19 and 23 is the inclusion therein, in combination as currently claimed, of the limitation of at least one of the sensor elements of the second type being designed in such a way that the at least one sensor element of the second type performs a function in the sensor device which differs from the function performed by the sensor elements of the first type. This limitation is found in claims 15, 19 and 23 is neither disclosed nor taught by the prior art of record, alone or in combination.
- The primary reason for the indication of the allowability of claims 16 and 17 is the inclusion therein, in combination as currently claimed, of the limitation of a device for interrogating a sensor device including $n+m$ control devices which are connectable to the n row conductors and the m column conductors, each control

device being individually switchable in such a way that in a first mode the control device operates as a driver cell for applying an electrical test voltage to the row or column conductor to be connected, and in a second mode the control device operates as a measuring transformer for processing the signal at the column or row conductor which is to be connected. This limitation is found in claims 16 and 17 is neither disclosed nor taught by the prior art of record, alone or in combination.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant's attention is invited to the followings whose inventions disclose similar devices.

- O'Hanlon (US 3,573,773 A) teaches a readout device.
- Hucking et al. (US 4,709,228 A) teach an electronic data input keyboard comprising keys provided with conductive contacts.
- Petterson (US 4,725,816 A) teaches a matrix keyboard encoder circuit.
- Freed (US 6,789,034 B2) teaches data collection methods and apparatus with parasitic correction.
- Nitschke et al. (US 6,853,306 B1) teach a circuit arrangement for measuring the resistance of resistors in a pressure-sensitive resistor mat.

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CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoai-An D. Nguyen whose telephone number is 571-272-2170. The examiner can normally be reached on M-F (8:00 - 5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hoai-An D. Nguyen
Examiner
Art Unit 2858
HADN

HADN

V. Nguyen
6/30/2005
VINCENT Q. NGUYEN
PRIMARY EXAMINER